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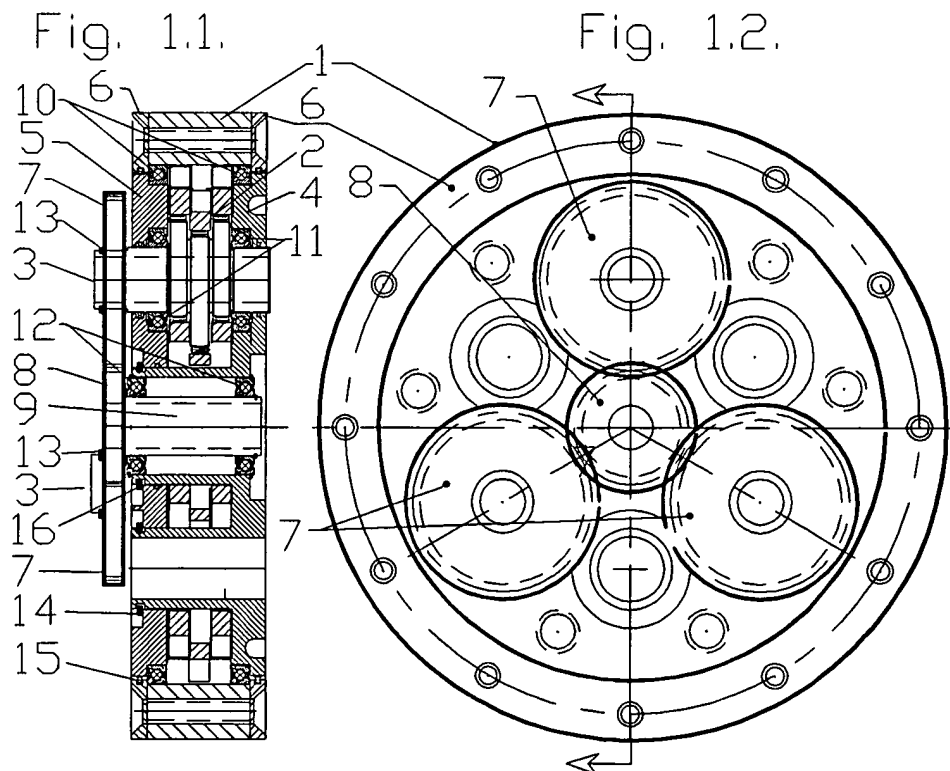
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Replacement Sheet CY-FIG1

Table 1 (Parts Name to Fig.1. .)

- 1 CYCLO ID-GEAR HOUSING
- 2 CYCLO OD-GEAR DISK
- 3 ECCENTRIC 0+120+240deg. HOLLOW SHAFT
- 4 DRIVE-THROUGH HOLLOW FLANGE
- 5 CONTAINING FLANGE
- 6 BEARING RETAINER
- 7 PLANET GEARS
- 8 PLANET SUN GEAR
- 9 SUN GEAR HOLLOW AXIS
- 10 BEARING CYCLO AXIS
- 11 ECCENTRIC BEARING
- 12 BEARING SUN GEAR SHAFT
- 13 SNAP RING PLANET GEAR
- 14 SNAP RING FLANGE
- 15 SEAL X-TYPE
- 16 SNAP RING CENTER OF HOUSING



Appl.No. 10/042,626
Amdt. Dated July 22, 2004
Reply to office action of Aug.17,2004

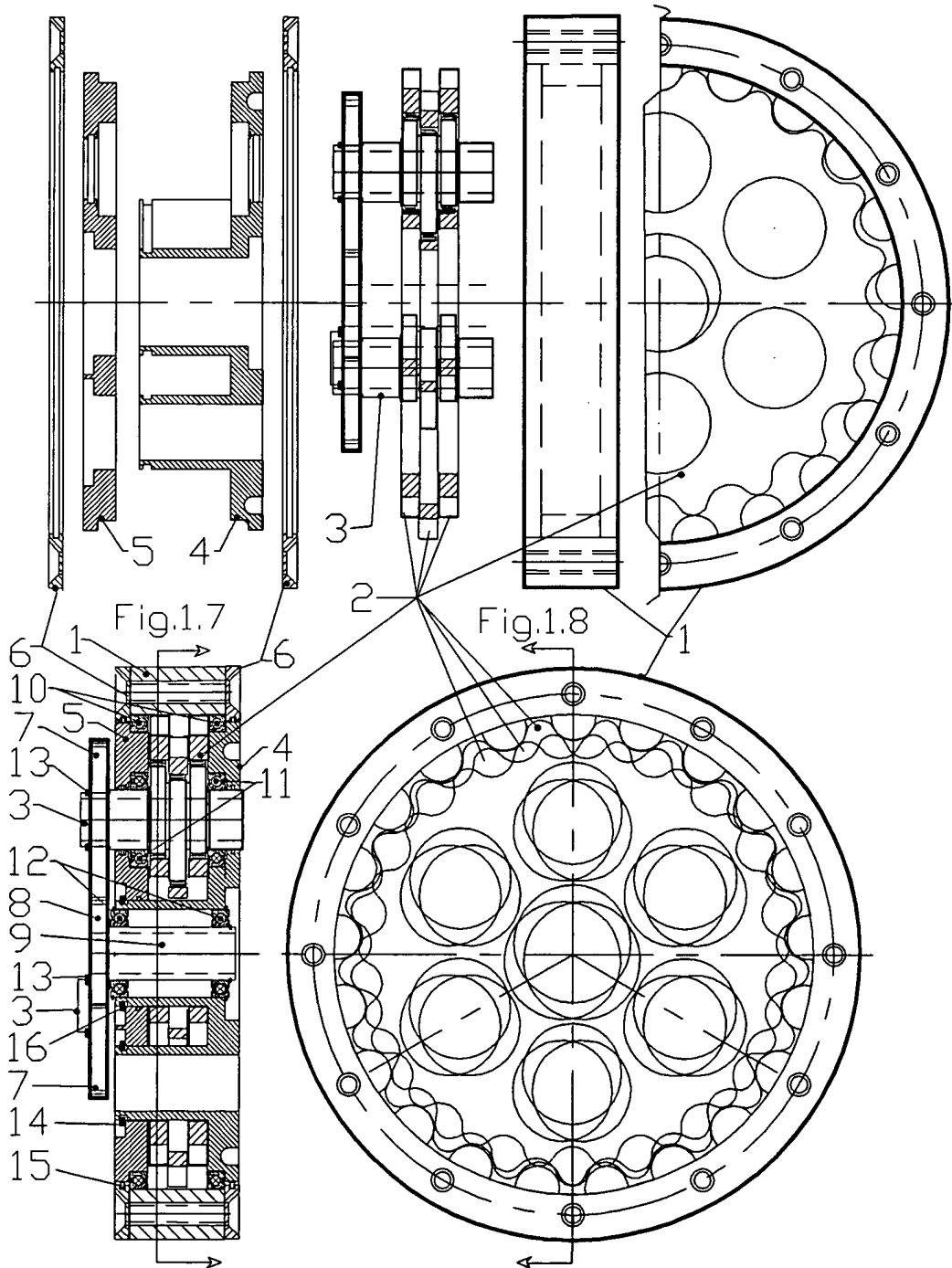
Replacement Sheet CY-FIG2

Fig.1.3

Fig.1.4

Fig.1.5

Fig.1.6



Appl.No. 10/042,626

Amdt. Dated July 22, 2004

Reply to office action of Aug.17,2004

Replacement Sheet CY-FIG3

Table 2 (Cyclo Gear Relations and Symbols)

R = radius of cyclo tooth

r = r of Arc Tan($R, D_1, 2, R$)

D = diameter at tooth centers

\square = offset of eccentrics

Z_1 = number of cyclo gear teeth

Z_2 = number of cyclo disk teeth

Relations:

$$Z_2 = Z_1 - 1$$

$$D_1 = Z_1 \times R$$

$$D_2 = Z_2 \times R$$

$$\square = R/2$$

$$U_{\text{cyclo}} = R_2/R_1 - 1$$

$$U_{\text{total}} = (Z_{\text{sun}} / Z_{\text{planet}}) (U_{\text{cycle}})$$

$$e = \text{Ecc. Index} = 360\text{deg} / \text{No of Cyclo Disks}$$

Fig.1.9

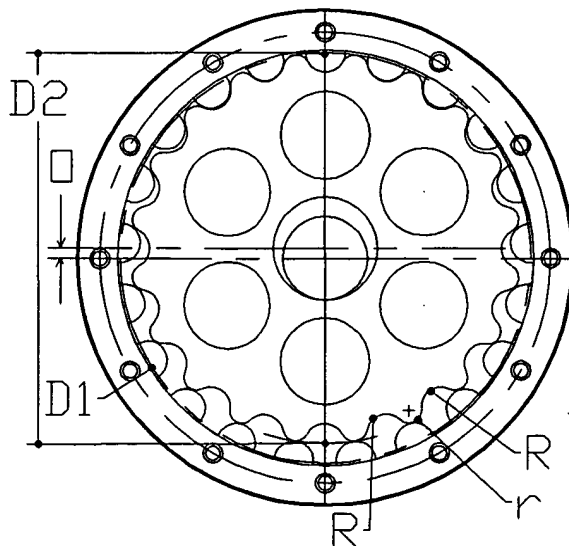
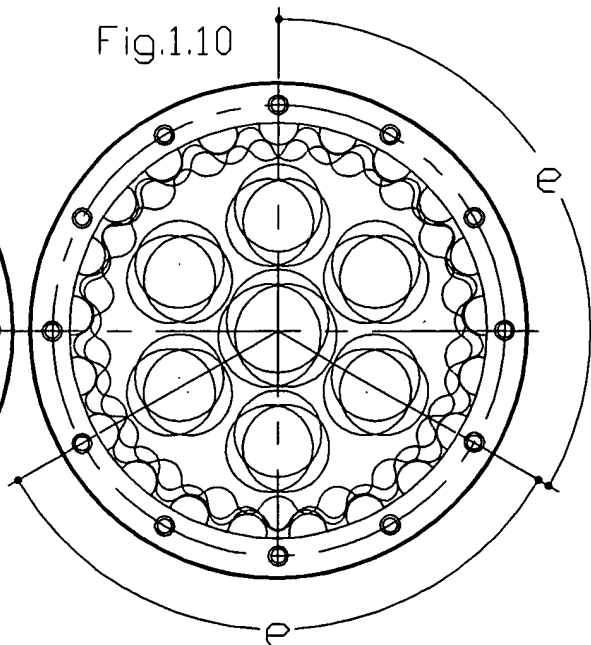


Fig.1.10



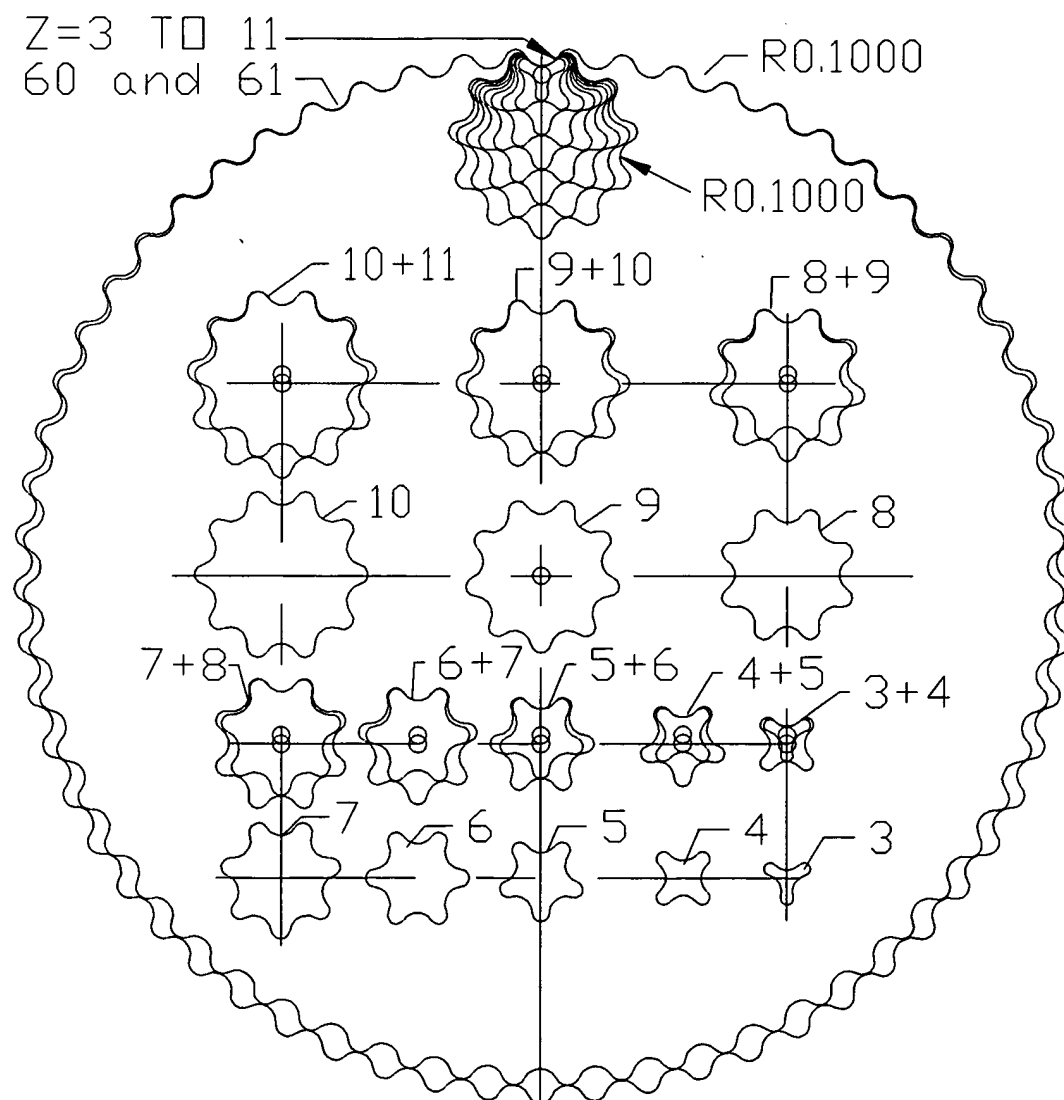
Appl.No. 10/042,626
Amdt. Dated July 22, 2004
Reply to office action of Aug.17,2004

Replacement Sheet CY-FIG4

TABLE 3

Sample Cyclo Gear Relations from 3 to 11 and 60 and 61 Cycle Teeth

Fig. 1.11



Center-Driven Cyclo Gear Axes with one Fig.2.1,
two Fig.2.2, three Fig. 2.3 Center-Driven Wave
Disks, six hollow Driveout Pins and Bushings.

Fig. 2

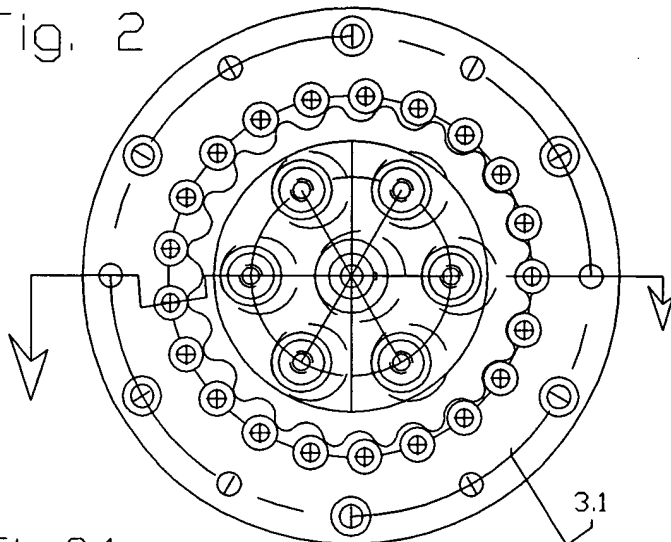


Fig.2.1

1 Disk

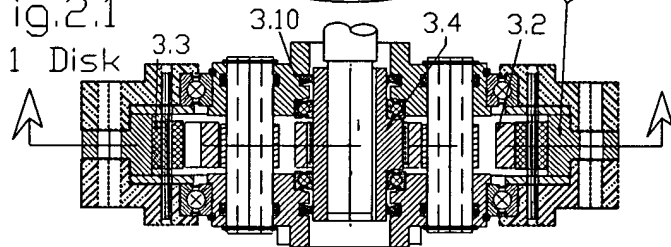


Fig.2.2

2 Disks

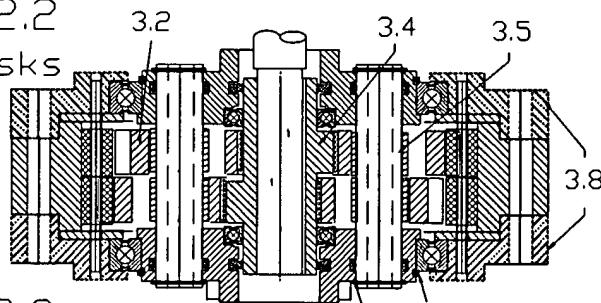


Fig.2.3

3 Disks

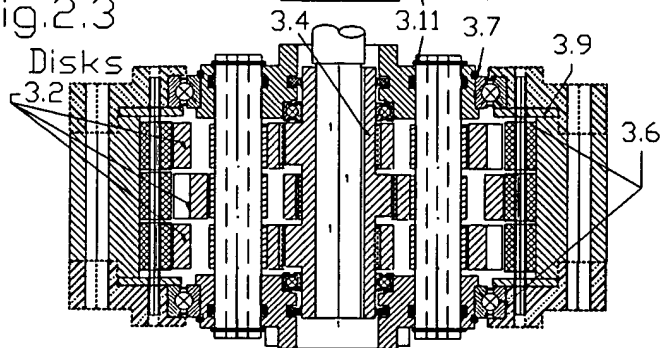


TABLE 4

To Fig.2. . Part
Names

- 3.1 Cyclo Gear
- 3.2 Cyclo Disk(s)
- 3.3 Cyclo Rollers
- 3.4 Eccentric(s)
- 3.5 Hollow Pins
- 3.6 Bearing Flg.
- 3.7 Snap Ring
- 3.8 End Covers
- 3.9 Stop Rings
- 3.10 Shaft Seal
- 3.11 Snap Ring

Appl.No. 10/042,626
Amdt. Dated July 22, 2004
Reply to office action of Aug.17,2004
Replacement Sheet CY-FIG6

Fig. 3

FREQUENCY SHIFT AND SERVO
FILTER TO CONTROL CRITICAL
FREQUENCY VIBRATION

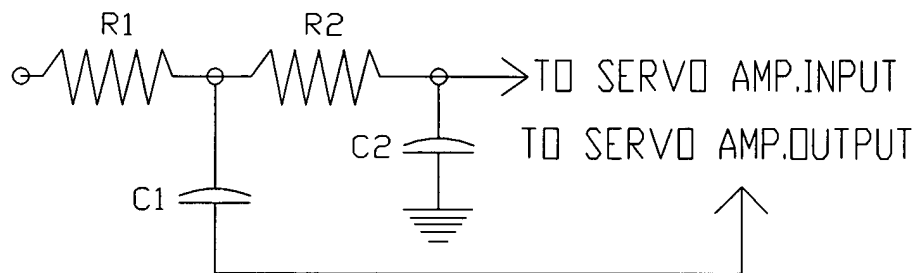
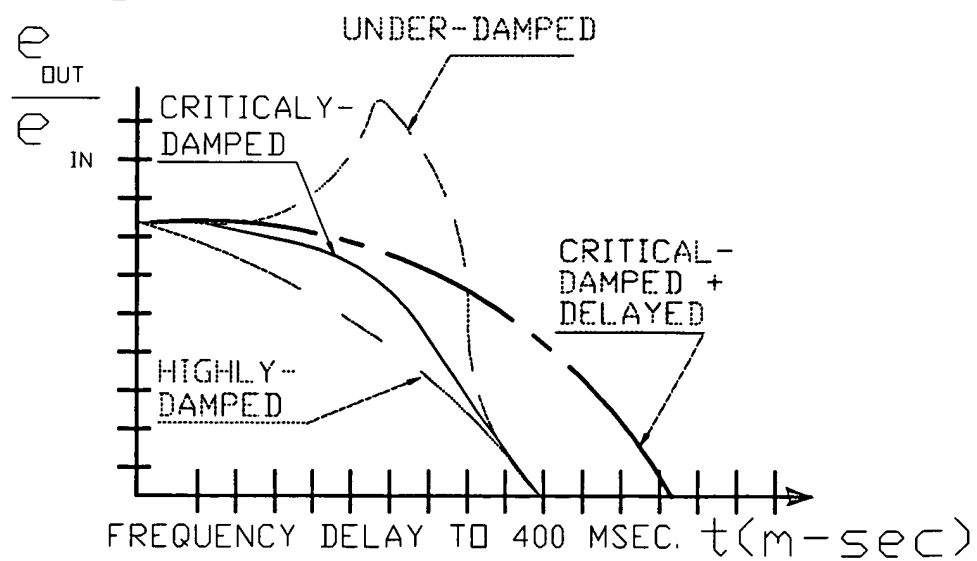


Fig. 4



Appl.No. 10/042,626

Amdt. Dated July 22, 2004

Reply to office action of Aug.17,2004

Replacement Sheet CY-FIG7

Fig. 5

ONE DISK ABSOLUTE ANGULAR ROTATION ENCODER USING
LOW-POWER INFRARED LED, TTL UP/DOWN COUNTER WITH
SHIFT REGISTER AND LOCAL RECHARGEABLE BATTERY POWER BACKUP

